

US-PAT-NO: 6798395

DOCUMENT-IDENTIFIER: US 6798395 B1

TITLE: Information terminal equipment provided with  
backlight

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TITLE - TI (1):

Information terminal equipment provided with backlight

Detailed Description Text - DETX (6):

In FIG. 1, when any one of keys in the key operational portion 4 is pushed down, the CPU 2 detects key-input and sends a power supply control signal for switching on the power supply to the optical sensor portion 1 to cause the optical sensor portion 1 to detect lightness of the surrounding light. Further, the CPU 2 actuates a timer 1 for backlight illumination time and a timer 2 for optical sensor power supply control period. The timer 1 operates only for a specified time T1 and the CPU 2 controls the backlights of the LCD display portion and the key operational portion during the operation time of the timer 1. The timer 2 operates at a specified period T2, and the CPU 2 switches on the power supply of the optical sensor portion 1 at every periods T2 and reads the light detecting result of the surrounding light.

Detailed Description Text - DETX (7):

When the timer 2 is actuated by pushing down the key, the power supply of the optical sensor portion 1 is switched on and the optical sensor portion operates to detect the surrounding light. When the CPU2 reads the detected lightness of the surrounding light, it switches off the power supply of the optical sensor portion 1, so that consumption of a battery is suppressed to a minimum. Simultaneously, the CPU 2 actuates the timer 1, and sets and controls

the lightness of the backlight according to the lightness of the surrounding light. Further, when the surrounding lightness detected by the optical sensor portion 1 is enough to perform reading of the LCD display portion 3 and the operation in the key operational portion 4, the CPU controls the backlight so that the electric current to the backlight is shut off.

Detailed Description Text - DETX (8):

After the timer 1 is actuated, when the key in the key operational portion is pushed down within the specified time T1, the timer 1 is reset and restarted. When the key is pushed down within the time T1 in this manner, the timer 1 does not reach the time T1 and the backlight continues illumination. Particularly, when the large number of the key operations such as registration of telephone number, input of character message and the like is required, the key operations are sequentially performed. Therefore, the backlight continues according to the key operations.

Detailed Description Text - DETX (9):

When the time T1 passes after the key operation, since the timer 1 reaches the specified time, it shuts off the electric current to the backlight, stops the operation of the timer 2 and is on standby till a next key operation. On the other hand, the timer 2 operates at the period T2. While the timer 1 operates, that is, while the timer 1 controls the backlight, when the timer 2 reaches the time T2, the timer 2 switches on the power supply of the optical sensor portion 1 again independently of the key operation, reads the lightness of the surrounding light, and then switches off the power supply of the optical sensor portion. Further, the lightness of the backlight is set and controlled according to the detected lightness of the surrounding light. Every time the timer 2 reaches the period T2, the power supply of the optical sensor portion 1 is switched on in this manner, and the optical sensor portion 1

detects the  
surrounding light and controls the lightness of the backlight.  
Further, when  
the surrounding lightness detected by the optical sensor portion 1 is  
light  
enough to perform reading of the LCD display portion 3 and the  
operation in the  
key operational portion 4, the optical sensor portion 1 controls the  
application of the electric current to the backlight so that the  
electric  
current is shut off. This operation is performed at the period T2  
specified by  
the timer 2 while the timer is operating, that is, while the  
backlight is  
controlled.